

CLAIMS

1. Method of validating the detection of a correlation peak between:
 - a signal transmitted by a plurality of navigation satellites and received by an RNSS satellite radio navigation receiver, said signal corresponding to a sum of signals each sent by a satellite and each modulated by a spread spectrum signal characteristic of said satellite,
 - a local replica generated by said receiver, said replica being the replica of a spread spectrum signal characteristic of a satellite that is being looked for,
said method including a step of determining the correlation function (3) as a function of time between said received signal and said local replica,
said method being characterized in that it further includes a step of comparing said correlation function (3) with the theoretical autocorrelation function (2) as a function of time of said spread spectrum signal characteristic of said satellite that is being looked for over the whole of the vector of the correlation function.
2. Validation method according to claim 1 characterized in that it includes a step of determining said theoretical autocorrelation function as a function of time of said spread spectrum signal characteristic of said satellite that is being looked for.
3. Validation method according to either of the preceding claims characterized in that said step of comparing said correlation function (3) with the theoretical autocorrelation function (2) includes a step of comparing secondary peaks (5, 7) of each of said functions.
4. Validation method according to claim 1 or claim 2 characterized in that said comparison step includes a step of calculating the correlation between said correlation function and said autocorrelation function.
5. Validation method according to any one of claims 1 to 4 characterized in that said spread spectrum signal is a signal modulating said signal with a known pseudorandom sequence

replacing each bit of said signal.

6. Validation method according to any one of the preceding claims characterized in that, in the event of non-validation of the detection of said correlation peak, said method includes the following steps:

- a step of determining theoretical intercorrelation functions as a function of time between said spread spectrum signal characteristic of said satellite that is being looked for and each of the satellites other than said satellite that is being looked for, and
- a step of comparing said correlation function with each of said theoretical intercorrelation functions.

7. Validation method according to the preceding claim characterized in that each of said spread spectrum signals associated with a particular satellite is selected so that said theoretical autocorrelation function and each of said theoretical intercorrelation functions are different.

8. Validation method according to either claim 6 or claim 7 characterized in that each of said spread spectrum signals associated with a particular satellite is selected so that each of said theoretical intercorrelation functions is decorrelated.

9. Device for validating the detection of a correlation peak between:

- a signal transmitted by a plurality of navigation satellites and received by an RNSS satellite radio navigation receiver, said signal corresponding to a sum of signals each sent by a satellite and each modulated by a spread spectrum signal characteristic of said satellite, and
- a local replica generated by said receiver of a spread spectrum signal characteristic of a satellite that is being looked for, said device including means for determining the correlation function (3) as a function of time between said received signal and said local replica,

30 said device being characterized in that it further includes means for comparing said correlation function (3) with the theoretical autocorrelation function (2) as a function of time of said spread spectrum signal characteristic of said satellite that is being looked

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for over the whole of the vector of the correlation function.

METHOD OF VALIDATING THE DETECTION OF A CORRELATION PEAK BY A SATELLITE POSITIONING SYSTEM RECEIVER

The present invention relates to a method of validating the detection of a correlation peak between a signal transmitted by a plurality of navigation satellites and received by an RNSS satellite radio navigation receiver, said signal corresponding to a sum of signals each sent by a satellite and each modulated by a spread spectrum signal characteristic of said satellite and a local replica generated by said receiver of a spread spectrum signal characteristic of a satellite that is being looked for. Said method includes a step of determining the correlation function 3 as a function of time between said received signal and said local replica and further includes a step of comparing said correlation function 3 with the theoretical autocorrelation function 2 as a function of time of said spread spectrum signal characteristic of said satellite that is being looked for.

Figure to be published : Figure 1